

How to handle a radioactive nucleus: a LEGO robot for ISODLE

S. Qureshi, J. Hayes, T. Cocolios, E. Nichols

03-12-2015

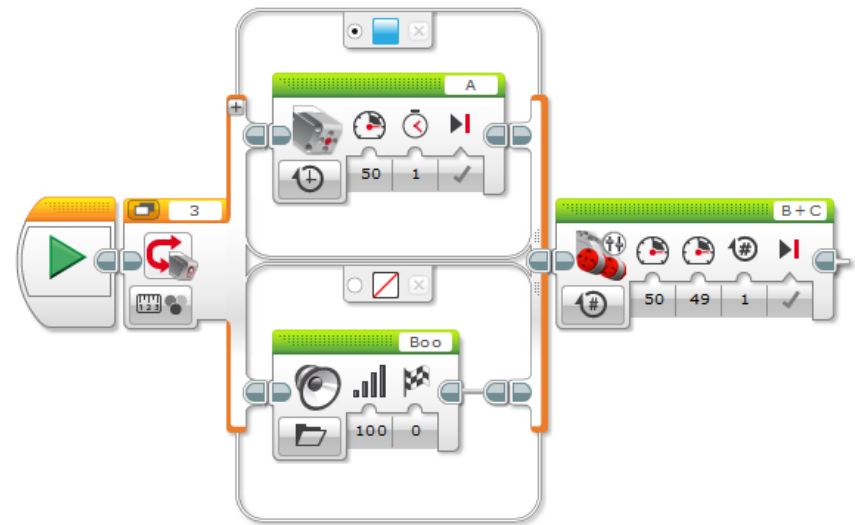
The Brief

- 10 LEGO Mindstorm Education sets
- In celebration of ISOLDE's 50th anniversary
- To engage at least 60 schoolchildren aged 14-16 to promote careers in science
- Initial 'robot competition' fell through
- Repurposed into a transferrable and mobile robotics workshop

Designing LE-MITH

- Limited by the pieces included in each set
- Based on the included model, first design had a few flaws
- Unique short-action lever was designed to execute compound movements
- Design must be simple enough to produce instructions

- Implemented using proprietary language
- Uses pictograms and simple variables to introduce the concept of programming
- Workshop content delivered through IDE using included teaching tools



Delivering LE-MITH

- 15 minute presentation about nuclear physics
- Tackles misconceptions about the nuclear industry
- To date:
 - 13 volunteers trained to run sessions
 - 2 sessions delivered
 - Additional training session booked
 - Interest expressed from 15 further schools

Participant Feedback

Statement	Score /28
“I would recommend this workshop to a friend.”	27
“I enjoyed this workshop.”	24
“I now understand the importance of robots in the nuclear industry.”	21
“The session has improved my programming skills.”	20

Future Scope

- Flexible – can be adapted, e.g. Mars rover theme.
- In current state, workshop can be implemented remotely
- Capacity to expand designs of both LE-MITH and new, more complex robots.
- Will continue into 2016 despite end date.



Science & Technology
Facilities Council



The University of Manchester

